

In the Claims

1-60 (canceled)

61. (new) A method of using a G protein-coupled receptor to screen candidate compounds as pharmaceutical agents for an ischemic heart disease, said method comprising the steps of:

- (a) contacting one or more said candidate compounds with a host cell or with membrane of a host cell that expresses said receptor; and
- (b) determining the ability of the compound or compounds to stimulate functionality of the receptor;

wherein the ability of the compound or compounds to stimulate functionality of the receptor is indicative of the compound or compounds being an agonist or a partial agonist of the receptor;

wherein the G protein-coupled receptor is a receptor comprising an amino acid sequence selected from the group consisting of:

- (i) the amino acid sequence of SEQ ID NO:2;
- (ii) amino acids 2-433 of SEQ ID NO:2;
- (iii) the amino acid sequence of SEQ ID NO:3;
- (iv) amino acids 2-433 of SEQ ID NO:3;
- (v) the amino acid sequence of a G protein-coupled receptor encoded by a polynucleotide comprising a nucleotide sequence, said nucleotide sequence being obtainable by a process comprising performing PCR on a human DNA sample using specific primers SEQ ID NO:7 and SEQ ID NO:8; and
- (vi) SEQ ID NO:5;

and wherein the pharmaceutical agent is an agonist or a partial agonist of the receptor.

62. (new) The method as set forth in claim 61, wherein the ischemic heart disease is selected from the group consisting of myocardial infarction, post-myocardial infarction remodeling, and congestive heart failure.

63. (new) The method as set forth in claim 61, wherein the host cell is selected from the group consisting of 293, 293T, CHO, COS-7, melanophore, and cardiomyocyte.
64. (new) The method as set forth in claim 61, wherein said determining is through the measurement of a level of a second messenger selected from the group consisting of cyclic AMP (cAMP), cyclic GMP (cGMP), isositol triphosphate (IP₃), diacylglycerol (DAG), and Ca²⁺.
65. (new) The method as set forth in claim 61, wherein the functionality is reduction of a level of intracellular cAMP.
66. (new) The method as set forth in claim 61, wherein the host cell comprises Gq(del)/Gi fusion construct.
67. (new) The method as set forth in claim 66, wherein the functionality is elevation of a level of intracellular IP₃.
68. (new) The method as set forth in claim 66, wherein the functionality is elevation of a level of intracellular Ca²⁺.
69. (new) The method as set forth in claim 61, wherein the functionality is elevation of a level of GTPγ binding to membrane comprising the G protein-coupled receptor.
70. (new) The method as set forth in claim 61, wherein the functionality is elevation of a level of pigment aggregation.
71. (new) The method as set forth in claim 61, wherein the functionality is elevation of a level of cardiomyocyte survival.

72. (new) The method as set forth in claim 61, wherein the functionality is reduction of a level of cardiomyocyte apoptosis.
73. (new) The method as set forth in claim 61, wherein the phenylalanine residue at amino acid position 312 of SEQ ID NO:2 or of SEQ ID NO:3 is substituted with a lysine residue.
74. (new) The method as set forth in claim 61, wherein the G protein-coupled receptor is recombinant.
75. (new) The method as set forth in claim 61, wherein the host cell comprises an expression vector, said expression vector comprising a polynucleotide encoding the G protein-coupled receptor.
76. (new) A pharmaceutical agent according to the method of claim 61.
77. (new) A method of preparing a pharmaceutical composition, comprising admixing a pharmaceutical agent as set forth in claim 76 and a pharmaceutically acceptable carrier.
78. (new) A pharmaceutical composition comprising a pharmaceutical agent as set forth in claim 76 and a pharmaceutically acceptable carrier.
79. (new) A method of preventing or treating an ischemic heart disease, of preventing or treating a cardiovascular disorder, or of changing cardiovascular function, said method comprising providing or administering to an individual in need thereof a therapeutically effective amount of a pharmaceutical composition as set forth in claim 78.
80. (new) A method of cardioprotection, said method comprising providing or administering to an individual in need thereof a therapeutically effective amount of a pharmaceutical composition as set forth in claim 78.

81. (new) A method of using a pharmaceutical agent as set forth in claim 76 for making a medicament for preventing or treating an ischemic heart disease, for preventing or treating a cardiovascular disorder, or for changing cardiovascular function in an individual.

82. (new) A method of using a pharmaceutical agent as set forth in claim 76 to identify an individual at risk for progressing toward an ischemic heart disease, said method comprising the steps of:

- (a) administering to the individual an effective amount of radiolabeled said pharmaceutical agent; and
- (b) detecting a level of heart-associated radiolabel in the individual;

wherein a level of heart-associated radiolabel in the individual lower than a normal level of heart-associated radiolabel is indicative of the individual being at risk for progressing toward an ischemic heart disease.

83. (new) A method of using a knockout mouse to identify whether a candidate compound has therapeutic efficacy for the prevention or treatment of an ischemic heart disease or for the prevention or treatment of a cardiovascular disorder, wherein the knockout mouse is made by a method comprising the step of knocking out a gene encoding the polypeptide of SEQ ID NO:5.

84. (new) A method of using a non-human mammal transgenic for a human G protein-coupled receptor to identify whether a candidate compound has efficacy for cardioprotection, wherein the G protein-coupled receptor is a receptor comprising an amino acid sequence selected from the group consisting of:

- (i) the amino acid sequence of SEQ ID NO:2;
- (ii) amino acids 2-433 of SEQ ID NO:2;
- (iii) the amino acid sequence of SEQ ID NO:3;
- (iv) amino acids 2-433 of SEQ ID NO:3; and
- (v) the amino acid sequence of a G protein-coupled receptor encoded by a polynucleotide comprising a nucleotide sequence, said nucleotide sequence

being obtainable by a process comprising performing PCR on a human DNA sample using specific primers SEQ ID NO:7 and SEQ ID NO:8.